

AI Synthesis A1007 QUAD VCA

User's Manual

This is the Manual for the [A1007 Quad VCA](https://aisynthesis.com/product/ai007-quad-vca-mixer/) you can purchase it by going to:

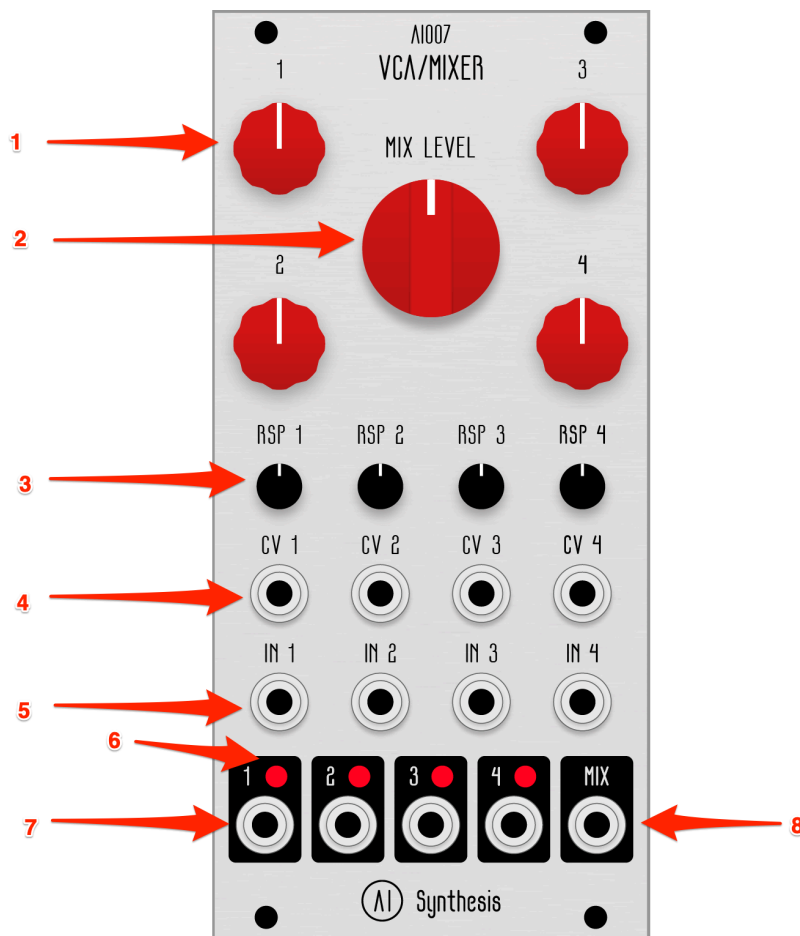
<https://aisynthesis.com/product/ai007-quad-vca-mixer/>.

1. About the A1007 Quad VCA

If you are new to DIY electronics, this VCA is **not** the first thing you should build. It is an expert level build that includes many SMD parts as well as many thru hole parts. The first module, the [A1001 Multiple](#) is ideal for beginners, as it teaches how to solder and signal flow.

The A1007 Quad VCA is a compact set of four analog voltage controlled amplifiers that utilize the famed 2164 ICs.. I chose this IC because it would allow me to provide a circuit that utilizes relatively few other parts, no hard to find or out of production parts, and it's exceptional sound quality and low distortion. All inputs are DC coupled for use with Audio and CV and feature a +5V gain scale (fully open at 5V).

2. A1007 Controls



1. Channel Gain Controls 1-4. This knob, as well as 2-4, set the gain for each of the four channels. With no CV inserted, the knob is an attenuator for a fixed voltage source to allow for static mixing. When CV is inserted, they act as attenuators for that CV.

2. Mix Knob. This knob is the master gain for each channel that appears in the Mix Out Jack (8).

3. Response Knobs 1-4. These knobs control the response of each VCA channel. Fully counter clockwise, the response of the VCA will be linear. As the knob is rotated clockwise, the response becomes less linear and more exponential, with the response fully exponential when fully clockwise..

4. CV Inputs 1-4. These inputs are for controlling the amplification of the input

signals (audio or cv) with voltage. With no cable inserted, the jack is normalled to an internal voltage source, and volume can be controlled by the Channel gain controls (1).

5. Signal Inputs 1-4. These are the VCA inputs. The audio or CV signal that should be controlled by voltage should be input here..

6. LEDs 1-4. These bi-color LEDs indicate the positive or negative voltage post Gain control (1) of each VCA.. Green indicates positive voltage, Red indicates negative voltage, and Amber indicates audio rate voltage that is moving quickly between positive and negative states.

7. Outputs 1-4. These jacks are for the output of each VCA channel. They are normalled to the Mix circuit, and with no cable inserted, the signal will go to the mix circuit. When a cable is inserted, that normalization is broken and the channel is separated from the mix circuit just to its output.

8. Mix Output. This output is the mix of all channels as controlled by their gain controls (1) and the Mix Level Knob (2). If a cable is inserted into any channel output (7), then that signal will not be present here.

3. Power

The AI007 uses a shrouded header to prevent the cable being plugged in the wrong way. The unit draws 50mA on each of the positive and negative sides.